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by coating the surface of a magnetic powder with a coloring agent, said magnetic material being in an amount of 10 wt.% to 40 wt.% of the entire weight of said toner, wherein said binder resin in said toner comprises a polyester resin, and has such a molecular weight distribution that has at least one peak within a range of 1,000 to 10,000 in said molecular weight distribution and a half peak width of 15,000 or less in terms of the molecular weight thereof, which molecular weight distribution is determined by subjecting a THF-soluble component contained in said toner to gel permeation chromatography (GPC), and said toner contains therein a THF-insoluble component in an amount of 2 wt.% to 40 wt.% of said toner.

Cancel claims 23 - 29 and 31.

R E M A R K S

A substitute specification, including the claims, is submitted herewith and attached hereto. This substitute specification is **identical**, word for word and line for line, to the copy of the specification (including claims) originally filed, except that the latter copy was a Facsimile copy that had been transmitted from Japan to applicants' undersigned attorney, and the substitute specification attached hereto is a printer copy of the same document, without change. Thus, the substitute specification attached hereto contains **no** additional subject matter not of record.

By the present Amendment, the specification has been corrected (at p. 41, line 22, and elsewhere) to comply with the requirement set forth in numbered section 3 of the Office Action concerning trademark usage.

A number of the claims have been amended, to overcome rejections under 35 U.S.C. §112 and §101, and/or to define further

and more fully certain novel and distinguishing features of the invention. Other claims have been cancelled, to expedite prosecution, but without prejudice to the scope of protection to which applicants are believed to be entitled. Since this Amendment increases the number of independent claims by two (beyond that previously paid for), a check for \$168 in payment of the requisite additional claims fee is submitted herewith.

Claims 1 - 22, 30, and 32 - 40 are in the application. No claim has been allowed.

Referring first to the rejection of claims 7, 20 and 38 under §112, second paragraph, as indefinite with respect to the magnetic field at which the saturation magnetization was determined, applicants advise that the saturation magnetization values given in the specification were in fact determined at a magnetic field of 10 kOe; hence, the numerical ranges recited in these claims refer to saturation magnetization at a magnetic field of 10 kOe.

In this art, it is conventional to determine magnetic characteristics such as saturation magnetization at a magnetic field of 10 kOe. See, e.g., U.S. patent No. 5,652,060 (Uchida et al., copy attached) at col. 18, lines 45-46, col. 20, lines 21-24, Table 1 at col. 25, lines 1-20, and claim 4; U.S. patent No. 5,532,095 (Asanae et al., copy enclosed), col. 1, lines 48-49, col. 3, lines 13-15, Table 1 at col. 5, lines 1-15, and claim 1; see also U.S. patent No. 5,858,593 (Tamura et al., copy attached), col. 5, lines 65-67 (795.8 kA/m = 10 kOe). Since 10 kOe is a conventional field for determination of saturation magnetization of magnetic particles and the like, applicants' disclosure and claims would be understood, by persons skilled in the art, as referring to saturation magnetization at a magnetic field of 10 kOe (note the frequent mentions of saturation magnetization values without specific reference to a 10 kOe field in the attached Uchida et al. and Asanae et al. patents) without need for an explicit statement to that effect. It is well settled that what would be understood by persons skilled in the art, to whom the specification is addressed, need not be expressly set forth in the

specification or recited in the claims. Therefore, it is submitted, the recitals of saturation magnetization ranges in rejected claims 7, 20 and 38 are not indefinite.

In response to the rejection of method claims 10 - 12 under §112, second paragraph, as indefinite, independent claim 10 (on which claims 11 and 12 are dependent) has been amended to recite, as a positive process step, "developing a latent electrostatic image with a toner of a two-component developer which comprises said toner and a magnetic carrier and is carried on a developer bearing member of a development unit," thereby clarifying how the method uses the two-component developer and also what steps are encompassed in the claimed method of forming an image.

Claim 10 has been further amended to clarify the "capable of" recital, to overcome any failure to provide proper antecedents therein, and to specify that the "contact" is "contact of said two-component developer with said toner." It is believed that the meaning of the "capable of" recital, especially as herein amended, will be fully understood from the description in the specification at pp. 21-23 and, with specific reference to the drawing, at pp. 46-54. See also the cited Tsuda et al. patent (No. 5,805,965) especially at cols. 13-15.

Accordingly, it is submitted that claims 10 - 12 are now properly definite, satisfying the requirements of §112, second paragraph.

In response to the rejection of claims 13 - 22 under §112, second paragraph, as indefinite, independent claim 13 (on which claims 14 - 22 are dependent) has been amended to recite that the claimed apparatus comprises "a development unit including a developer bearing member and a two-component developer comprising a toner and a magnetic carrier carried on said developer bearing member," thereby positively reciting the two-component developer as an element of the claimed apparatus and specifying the structural relationship between the developer and other elements of the apparatus. Inherently this amended recital makes clear how the apparatus uses the two-component developer. Additionally, the

"capable of" recital in claim 13 has been amended in the same manner (discussed above) as the corresponding recital in claim 10. It is submitted that these amendments self-evidently overcome all grounds of rejection of claim 13, and of the claims dependent thereon, under §112, second paragraph.

Applicants further respectfully submit that the rejection of method claims 10 - 12 under 35 U.S.C. §101 has been overcome by the above-discussed amendment of claim 10 setting forth in positive process terms a step involved in the process.

Referring to numbered section 8 of the Office Action, applicants agree with the Examiner's interpretation of the recital "toner contains carbon black on the inside . . ." set forth in claims 5, 18 and 36.

With reference to the rejection of apparatus claims 13 - 22 under 35 U.S.C. §102(b) as anticipated by Tsuda et al., it may be noted that claim 13 (as discussed above) has been amended herein to set forth the two-component developer as a positive element of the claimed combination. The recitals defining the developer are, therefore, now entitled to weight as limitations in determining the novelty and patentability of the subject matter of these claims. There is no teaching, nor for that matter any suggestion, in Tsuda et al., of image formation apparatus comprising a development unit including a developer bearing member and a two-component developer comprising a toner and a magnetic carrier carried on said developer bearing member, wherein the toner comprises **a binder resin and a magnetic material which is blackened by coating the surface of a magnetic powder with a coloring agent**, as amended claim 10 recites. Therefore, Tsuda et al. does not anticipate or make obvious the subject matter of amended claim 10, in which the two-component developer including the defined toner is a positive element of the claimed combination. Claims 14 - 22 distinguish patentably in like manner over Tsuda et al. by virtue of their dependence on claim 10.

Claim 1, rejected under 35 U.S.C. §102(b) as anticipated by EP `507, has been amended to recite

"A **two-component** developer comprising a **magnetic carrier and a toner** for developing a latent electrostatic image to a toner image, said toner comprising (a) a binder resin, and (b) a magnetic material which is blackened by coating the surface of a magnetic powder with a coloring agent, said magnetic material being in an amount of 10 wt.% to 40 wt.% of the entire weight of said toner" (emphasis added).

Whatever EP `507 may be said to disclose regarding the toner *per se*, there is clearly no teaching or suggestion in the reference to combine such a toner with a magnetic carrier in a two-component developer, the combination to which claim 1 is now limited. Therefore, amended claim 1 is not anticipated by EP `507 but distinguishes patentably thereover in reciting the combination of the toner with a magnetic carrier in a two-component developer. Claims 2 - 7, being dependent on claim 1, are believed to be patentably distinguishable therewith over EP `507.

Referring to the rejection of claims 32 - 38 under 35 U.S.C. §103(a) as unpatentable over EP `507 in view of Diamond, applicants note that claim 32 has been limited by the present Amendment to image-forming apparatus including, as a positive element of the claimed combination, a two-component developer comprising the defined toner and a magnetic carrier. As mentioned above, EP `507 does not contemplate the combination of any toner with a magnetic carrier in a two-component developer; Diamond, at least insofar as applied in the rejection, is likewise exclusively concerned with mono-component developers. Hence, neither of the cited references, nor any combination of them, could make obvious the subject matter of claim 32 as herein amended. It follows that amended claim 32 distinguishes patentably over EP `507 and Diamond, however combined, in reciting the two-component developer as an element of the claimed subject matter, and that claims 33 - 39

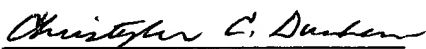
distinguish in like manner over these references by virtue of their dependence on claim 32.

Claims 1 - 3, 5, 6, 9, 32 - 34, 36, 37 and 40 have been rejected under 35 U.S.C. §103(a) as unpatentable over JP `609 in view of Diamond. JP `609, like EP `507, discloses only one-component developing. Each of claims 1 and 32 as herein amended is limited to a two-component developer including the defined toner and a magnetic carrier, or to apparatus including that two-component developer as a positive element of the claimed combination. Since neither JP `609 nor Diamond as applied contains any teaching with respect to two-component developers, it is submitted that the limitation to two-component developers distinguishes each of claims 1 and 32, as well as their respective rejected dependent claims (2, 3, 5, 6, 9 and 33, 34, 36, 37, 40) patentably over JP `609 and Diamond, whether considered separately or together.

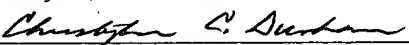
Claims 8, 30 and 39 have been rewritten in independent form incorporating all limitations of the claims on which they were respectively dependent, thereby overcoming the objection to their dependence on rejected claims. It is noted that method claims 10 - 12 were not rejected on prior art. All grounds of rejection of claims 23 - 29 and 31 have been mooted by the cancellation of those claims herein.

For the foregoing reasons, it is believed that this application is now in condition for allowance. Favorable action thereon is accordingly courteously requested.

Respectfully,


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I hereby certify that this paper is being deposited this date with the U.S. Postal Service as first class mail addressed to Assistant Commissioner for Patents, Washington, D.C. 20231.


Christopher C. Dunham
Reg. No. 22,031 Date NOV. 6, 2002

Attached
#6

Serial No.: 09/826,789

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The paragraph beginning at p. 41, line 20, has been replaced with the following paragraph:

--The toner of the present invention may further comprise other additives when necessary. Examples of the additives include lubricants such as [Teflon] "TEFLON" polymer and zinc stearate; abrasives such as cerium oxide and silicon carbide; fluidity-imparting agents or caking inhibitors such as colloidal silica and aluminum oxide; electroconductivity-imparting agents such as carbon black and tin oxide; and a fixing-promoting agent such as a low-molecular weight polyolefin.--

The paragraph beginning at p. 71, line 22, has been replaced with the following paragraph:

--Each two-component developer was set in a commercially available copying machine "MF-200" (trademark), made by Ricoh Company, Ltd., equipped with an image fixing unit having a [Teflon] "TEFLON" polymer image fixing roller. The image fixing unit was modified so as to permit the surface temperature of the [Teflon] "TEFLON" polymer image fixing roller to be variously changed. With the surface temperature set to a predetermined temperature, toner images were produced on sheets of paper (trademark "TYPE 6200", made by Ricoh Company, Ltd.)--

The paragraph beginning at p. 72, line 13, has been replaced with the following paragraph:

--For obtaining the cold-offset occurrence temperature, a toner-image-bearing paper was allowed to pass through the [Teflon] "TEFLON" polymer image fixing roller at a linear velocity of 120 to 150 mm/sec under a pressure of 1.2 kgf/cm², with a nip width being

set to 3 mm. The cold-offset temperature indicates a lower limit temperature at which image fixing is permissible, and the image fixing lower limit temperature of conventional toners designed to be fixed at lower temperatures is in the range of about 140 to 150°C.--

The paragraph beginning at p. 72, line 23, has been replaced with the following paragraph:

--For obtaining the hot-offset occurrence temperature, a toner-image-bearing paper was allowed to pass through the [Teflon] "TEFLON" polymer image fixing roller at a linear velocity of 50 mm/sec under a pressure of 2.0 kgf/cm², with a nip width being set to 4.5 mm.--

IN THE CLAIMS:

Claims 1 - 10, 13, 30, 32 and 39 have been amended as follows:

1. (Amended) A two-component developer comprising a magnetic carrier and a toner for developing a latent electrostatic image to a toner image, said toner comprising (a) a binder resin, and (b) a magnetic material which is blackened by coating the surface of a magnetic powder with a coloring agent, said magnetic material being in an amount of 10 wt.% to 40 wt.% of the entire weight of said toner.

2. (Amended) The [toner] developer as claimed in Claim 1, wherein said coloring agent comprises a pigment and/or a dye.

3. (Amended) The [toner] developer as claimed in Claim 2, wherein said pigment is carbon black.

4. (Amended) The [toner] developer as claimed in Claim 1, wherein said magnetic material is blackened by carbon black serving as said coloring agent and is in an amount of 10 wt.% to 30 wt.% of the entire weight of said toner.

5. (Amended) The [toner] developer as claimed in Claim 1, wherein when said toner contains carbon black on the inside

thereof, the amount of said carbon black is in a range of 6 wt.% or less of the entire amount of said toner.

6. (Amended) The [toner] developer as claimed in Claim 1, wherein said magnetic material has an average particle diameter in a range of 0.20 μm to 0.40 μm .

7. (Amended) The [toner] developer as claimed in Claim 1, wherein said toner has a saturation magnetization of 10 emu/g to 25 emu/g.

8. (Amended) [The toner as claimed in Claim 1] A toner for developing a latent electrostatic image to a toner image, said toner comprising (a) a binder resin, and (b) a magnetic material which is blackened by coating the surface of a magnetic powder with a coloring agent, said magnetic material being in an amount of 10 wt.% to 40 wt.% of the entire weight of said toner, wherein said binder resin in said toner comprises a polyester resin and has such a molecular weight distribution that has at least one peak within a range of 1,000 to 10,000 in said molecular weight distribution and a half peak width of 15,000 or less in terms of the molecular weight thereof, which molecular weight distribution is determined by subjecting a THF-soluble component contained in said toner to gel permeation chromatography (GPC), and said toner contains therein a THF-insoluble component in an amount of 2 wt.% to 40 wt.% of said toner.

9. (Amended) The [toner] developer as claimed in Claim 1, wherein said toner has a volume mean diameter of 2.5 μm to 10 μm .

10. (Amended) A method of forming an image, [using] comprising developing a latent electrostatic image with a toner of a two-component developer [comprising a] which comprises said toner and a magnetic carrier [by] and is carried on a developer bearing member of a development unit [which is] capable of changing [the] a state of incorporation of said toner [by] in said [two-developer] two-component developer on [a] the developer bearing member by changing [the] a state of [the] contact of said two-component developer [and] with said toner in accordance with

[the] changes in [the] concentration of said toner in said two-component developer on said developer bearing member, wherein said toner [comprising] comprises (a) a binder resin, and (b) a magnetic material which is blackened by coating the surface of a magnetic powder with a coloring agent.

13. (Amended) An image formation apparatus comprising a development unit [, using] including a developer bearing member and a two-component developer comprising a toner and a magnetic carrier carried on said developer bearing member, [which] said development unit [is] being capable of changing [the] a state of incorporation of said toner [by] in said two-component developer on [a] the developer bearing member by changing [the] a state of [the] contact of said two-component developer [and] with said toner in accordance with [the] changes in [the] concentration of said toner in said two-component developer on said developer bearing member, wherein said toner [comprising] comprises (a) a binder resin, and (b) a magnetic material which is blackened by coating the surface of a magnetic powder with a coloring agent.

30. (Amended) [The toner container as claimed in Claim 23] A toner container containing therein a toner for developing a latent electrostatic image to a toner image, said toner comprising (a) a binder resin, and (b) a magnetic material which is blackened by coating the surface of a magnetic powder with a coloring agent, said magnetic material being in an amount of 10 wt.% to 40 wt.% of the entire weight of said toner, wherein said binder resin comprises a polyester resin, and has such a molecular weight distribution that has at least one peak within a range of 1,000 to 10,000 in said molecular weight distribution and a half peak width of 15,000 or less in terms of the molecular weight thereof, which molecular weight distribution is determined by subjecting a THF-soluble component contained in said toner to gel permeation chromatography (GPC), and said toner contains therein a THF-insoluble component in an amount of 2 wt.% to 40 wt.% of said toner.

32. (Amended) An image formation apparatus comprising a toner container which contains therein a toner for developing a latent electrostatic image to a toner image, said toner comprising (a) a binder resin, and (b) a magnetic material which is blackened by coating the surface of a magnetic powder with a coloring agent, said magnetic material being in an amount of 10 wt.% to 40 wt.% of the entire weight of said toner; and a developer bearing member carrying a two-component developer comprising said toner and a magnetic carrier.

39. (Amended) [The image formation apparatus as claimed in Claim 32] An image formation apparatus comprising a toner container which contains therein a toner for developing a latent electrostatic image to a toner image, said toner comprising (a) a binder resin, and (b) a magnetic material which is blackened by coating the surface of a magnetic powder with a coloring agent, said magnetic material being in an amount of 10 wt.% to 40 wt.% of the entire weight of said toner, wherein said binder resin in said toner comprises a polyester resin, and has such a molecular weight distribution that has at least one peak within a range of 1,000 to 10,000 in said molecular weight distribution and a half peak width of 15,000 or less in terms of the molecular weight thereof, which molecular weight distribution is determined by subjecting a THF-soluble component contained in said toner to gel permeation chromatography (GPC), and said toner contains therein a THF-insoluble component in an amount of 2 wt.% to 40 wt.% of said toner.